

*REMARKS*

The Office Action and cited references have been carefully reviewed. Claims 1, 4, 7, 8, 12, 22, 24, 25, 27, 37, and 38 are rejected. Claims 1, 12, 37, and 38 have been canceled. The examiner has acknowledged that claims 2, 3, 5, 6, 9-11, 13-21, 23, 26, and 28-36 are directed to allowable subject matter. Claims 2, 7, 13, 17, 19, and 21 have been amended to be put in independent form, including an intervening claims. The amendment to put dependent claims in independent form does not change the scope of the claims.

*Claim Rejections under 35 USC §112*

Claim 24 has been rejected under 35 U.S.C. 112, second paragraph as having no antecedent basis for "the at least one induction orifice". The dependency of claim 24 has been changed to depend from claim 23. It is respectfully requested that the Examiner withdraw this rejection in view of the amendment to claim 24.

*Claim Rejections under 35 USC §102*

It is axiomatic in patent law that to reject a claim under 35 U.S.C. § 102, each and every limitation must be found, expressly or inherently, in a single reference and arranged as required by the claims such that the reference discloses the identical invention. *See* M.P.E.P. § 2131. Anticipation is not established if in reading a claim on something disclosed in a reference it is necessary to pick, choose, and combine various portions of the disclosure not directly related to each other by the teachings of the reference. *See Ex parte Beuther*, 71 USPQ2d 1313 (BdPatApp&Int 2003), citing *In re Arkley*, 172 USPQ 524, 526 (CCPA 1972). A reference applied as anticipatory of the claimed invention under 35 U.S.C. § 102 must be enabling so as to place one of ordinary skill in the art in possession of the claimed invention. *See Akzo N.V. v. United States Int'l Trade Commission*, 808 F.2d 1471, 1479, 1 USPQ2d 1241, 1245 (Fed. Cir. 1986) cert. denied, 482 U.S. 909, (1987); *Inre Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990).

Claims 1, 12, 37 and 38 have been canceled. In view of the cancellation of these claims, the rejection of these claims is moot. The Examiner is respectfully requested to withdraw the rejection of claims 1, 12, 37, and 38.

Claims 1, 4, 22, and 25 have been rejected under 35 U.S.C. 102(b) as being anticipated by Linder et al. (U.S. Patent 4,489,596). Claim 1 has been cancelled. Claim 4 has been amended to depend from claim 2 and is believed to be allowable for the same

reasons as claim 2. It is therefore respectfully requested that the rejection of claims 1 and 4 be withdrawn.

With respect to claim 22, claim 22 requires a plasma discharge plug detecting ion current in a combustion chamber of a diesel engine. A plasma discharge plug is not the same as a spark plug. Linder et al. '596 teaches a spark plug for an internal combustion engine. It is respectfully submitted that a spark plug such as that taught by Linder et al. '596 would fail to operate due to fuel fouling of the plug that occurs in combustion chambers of diesel engines. A plasma discharge plug, however, has a higher energy and rate of discharge than spark plugs used in internal combustion engines such as that taught by Linder et al. '596. The higher energy and rate of discharge provides the capability for a plasma discharge plug to recover from fuel fouling due to the cleaning function that results from the use of the higher energy and rate of discharge. In view of the foregoing, it is respectfully submitted that Linder et al. '596 does not teach or suggest all of the limitations of claim 22. Claim 25 depends from claim 22 and is believed to be patentable for the same reasons as put forth above for claim 22. It is therefore respectfully requested that the Examiner withdraw the rejection of claims 22 and 25.

*Claim Rejections under 35 USC §103*

To establish a prima facie case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one skilled in the art, to modify the reference or combine teachings. Any proposed modification cannot render the prior art unsatisfactory for its intended purpose or change the principle of operation of a reference. There must be a reasonable expectation of success and the prior art references must teach or suggest all of the claim limitations. See M.P.E.P. 2143. Conclusory statements cannot be relied on when dealing with particular combinations of prior art and specific claims. The rationale for combining references must be put forth. *In re Lee*, 61 U.S.P.Q.2d 1430, 1433. The Examiner can satisfy the burden of showing obviousness of the combination "only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references."

In its decision in *In re Lee*, the Federal Circuit reiterated and clarified the principle that a conclusory and ungrounded statement of motivation to combine is legally unacceptable. Specifically, the Federal Circuit noted that conclusory statements regarding motivation to combine are in violation of the PTO's federal mandate. (*See Lee*, at 1434 ("Omission of a

relevant factor [i.e. motivation to combine] required by precedent is both legal error and arbitrary agency action. ... Conclusory statements ... do not fulfill the agency's obligation...").) Thus, a simple statement of beneficial results that would follow from a combination is *not* a motivation to actually make the combination. The fact that a combination *can* be made to get the beneficial results that the Applicants disclosed does not amount to a motivation found *in the art* to make that very combination. See McGinley v. Franklin Sports, Inc. 262 F.3d 1339, 1351, 60.USPQ2d 1001, 1008 (Fed. Cir. 2001) ("The genius of invention is often a combination of known elements which in hindsight seems preordained. To prevent hindsight invalidation of patent claims, the law requires some 'teaching, suggestion or reason' to combine cited references.")

Claims 7 and 27 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Linder et al. '596 in view of Kemmler et al. (U.S. Patent # 5,904,127). This ground of rejection is respectfully traversed.

Claim 7 has been amended to further define the invention. Specifically, claim 7 requires that the plasma driver module provides high energy sparks to the spark plug such that the spark plug can recover from fuel fouling. Kemmler '127 teaches an electronic control unit for an internal combustion engine. No teaching or suggestion could be found in Linder '596 or Kemmler '127, singly or in combination, of a control module having a plasma driver module that provides high energy sparks to the spark plug such that the spark plug can recover from fuel fouling.

Claim 27 has been amended to require that the plasma driver module provide high current to the plasma discharge plug such that the plasma discharge plug can recover from fuel fouling. Kemmler '127 teaches an electronic control unit for an internal combustion engine. No teaching or suggestion could be found in Linder '596 or Kemmler '127, singly or in combination, of a control module having a plasma driver module that provides high energy sparks to the plasma discharge plug such that the plasma discharge plug can recover from fuel fouling.

Additionally, a plasma discharge plug has a higher energy and rate of discharge than spark plugs used in internal combustion engines such as that taught by Linder et al. '596. The higher energy and rate of discharge provides the capability for a plasma discharge plug to recover from fuel fouling due to the cleaning function that results from the use of the higher energy and rate of discharge. No teaching or suggestion could be found in Linder '596 or Kemmler '127, singly or in combination, of a plasma discharge plug.

Furthermore, the Office Action states that "It would have been obvious to one with ordinary skill in the art at the time the invention was made to use the spark plug of Linder et al in

an ignition system having a spark control module responsive to the ion current provided by the integral sensor, as taught by Kemmler et al." It is respectfully submitted that this statement is merely a conclusory statement prohibited by *In re Lee* as conclusory statements regarding motivation to combine are in violation of the PTO's federal mandate.

In view of the foregoing, it is respectfully submitted that a *prima facie* case of obviousness has not been put forth. It is therefore respectfully requested that the rejections of claims 7 and 27 be withdrawn.

Claim 8 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Nomoto (Japan 63-215878) in view of Linder et al. '596. This ground of rejection is respectfully traversed. In the rejection of claim 8, the Office Action states that Nomoto discloses a method of starting a diesel engine using multiple sparks and that Linder '596 teaches a spark plug with an integral combustion sensor.

It is respectfully submitted that a person of ordinary skill looking to the problem of starting a diesel engine with a spark plug would look to a spark plug design where an ion sensor is integrated within the spark plug. It is therefore submitted that there is no motivation or suggestion to combine the references.

Furthermore, claim 8 has been amended to clarify that a single spark is used to cold start the diesel engine. The amendment to claim 8 does not narrow the scope of the claim. Nomoto and Linder et al. '596 have been reviewed. No teaching or suggestion could be found in Nomoto or Linder et al. '596, singly or in combination, or a method to cold start a diesel engine with a single spark.

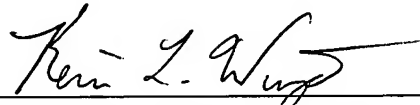
In view of the foregoing, it is respectfully submitted that a *prima facie* case of obviousness has not been put forth. It is therefore respectfully requested that the rejection of claim 8 be withdrawn.

In re Appln. Of: Luigi Tozzi et al.  
Application No.: 10/822,401

*Conclusion*

The application is considered in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Kevin L. Wingate", written over a horizontal line.

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